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EXAMINER	
NOGUEROLA, ALEXANDER STEPHAN	
ART UNIT	**PAPER NUMBER**
1753	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/640,985	SRINIVASAN ET AL.	
	Examiner	**Art Unit**	
	ALEX NOGUEROLA	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment of 7/18/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,7-10,12-20,22-33 and 37-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,7-10,12-20,22-33 and 37-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment of July 18, 2007 does not render the application allowable.

Response to Arguments

2. Applicant's arguments filed July 18, 2007 have been fully considered but they are not persuasive.

Applicant asserts,

> As noted above, Applicants have amended independent claims 1 and 31 to now include and recite a micro-pump. Since Chan et al. does not disclose using a micro-pump, as the Examiner states, neither claims 1 and 31 nor the claims depending therefrom can be anticipated by Chan et al. thereby obviating this rejection. Furthermore, claims 1, 20, and 31 have been amended to recite that the analytic circuitry is embodied on a single microcircuit which, again as stated by the Examiner, is not disclosed by Chan et al. and, therefore, is also a basis for obviating the Examiner's §102 rejection.

The Examiner respectfully disagrees that Chan does not disclose using a micro-pump. As stated on page 4 of the Office action of January 18, 2007, "As to Claims 2 and 35, Chan et al. disclose using a pump to manipulate sample flow throughout the micro-channels (Page 11, paragraph 0102)." Although this passage does not state that the disclosed pumps are micropumps, this is strongly suggested, if not implied, by the passage [0102] because it states, "As such, the invention provides *microfluidic cassettes or devices* ... The devices of the invention can include one or more wells for sample manipulation, waste or reagents; *microchannels* to and between these wells, including *microchannels* containing ... on-line pumps ... [emphasis added]" Also, in other places Chan discloses that the devices of the invention can be fabricated by "a variety of micromachining and microfabrication techniques" or that they are microfluidic devices. See [0103] and [0071].

The Examiner also respectfully disagrees that Chan does not disclose analytic circuitry embodied on a single microcircuit. As stated on page 3 of the Office action of January 18, 2007, "... Chan et al. disclose ... a circuit coupled to the sensors to detect the presence of a constituent at each sensor (Page 11, paragraph 0096)." The cited passage and surrounding passages further disclose that there may be a multiplicity of circuits on the chip ([0096]) and that the circuits may allow signal processing ([0095]), such as with a preamplifier or a filter ([0100] and [0101]).

Status of Objections and Rejections pending since the Office action

Of January 18, 2007

3. All previous objections and rejections are withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 5, 10, 12-14, 20, 31-33, and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. US 2002/0090649 A1 ("Chan").

Addressing claims 1, 5, and 14, Chan discloses an apparatus for testing a sample for constituents comprising

a plurality of electrochemical sensors, each sensor adapted to detect a different constituent (page 8, [0065]; page 2, [0018]), including concentration (page 15, [0138]) within the sample, a reservoir for containing the sample, a plurality of interconnected channels fluidly coupling the reservoir to the sensors (Figure 9A; page 8, [0070]; page 8, [0073]);

a pump fluidly coupled to the reservoir for applying positive pressure to the reservoir and the plurality of interconnected channels (Page 11, [0102]);

a circuit coupled to the plurality of sensors to analyze the electrochemical properties of the sensors to detect the presence of a particularly constituent at each sensor (page 11, [0096]), wherein the circuitry can be used to analyze each sensor distinctly (page 7, [0060]; page 11, [0096]), wherein the circuit is embodied on a single microchip or a chip and integrated into the apparatus (page 11, [0095]-[0101] further disclose that there may be a multiplicity of circuits on the chip [0096] and that the circuits may allow signal processing [0095], such as with a preamplifier or a filter [0100] and [0101]).

Chan does not explicitly state that the disclosed pumps are micropumps. However, it would have been obvious to one with ordinary skill in the art at the time of the invention to have the pumps be micropumps (if not already implied by [0102]) because paragraph [0102] because states, "As such, the invention provides *microfluidic cassettes or devices* ... The devices of the invention can include one or more wells for sample manipulation, waste or reagents; *microchannels* to and between these wells, including *microchannels* containing ... on-line pumps ... [emphasis added]" Also, in other places Chan discloses that the devices of the invention can be fabricated by "a variety of micromachining and microfabrication techniques" or that they are microfluidic devices. See [0103] and [0071].

Addressing claim 10, Chan discloses analytic circuitry for analyzing the electrochemical properties of the sensors, a multiplexer, and circuitry for controlling the

multiplexer to selectively couple the circuitry to the sensors (Page 7, paragraph 0060, Page 11, paragraph 0096).

Addressing claims 12 and 13, Chan discloses the analytical circuitry being electrically coupled to the working, reference, and counter electrodes (Page 15, paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164) of each sensor and is adapted to apply a series of electrical pulses to the cell and measure the transient responses through the cell to each of the pulses, and then integrate each transient response to a pulse and derive electrical charge Q as a function of the magnitude of the corresponding pulse (Page 11, paragraph 0098, Page 15, paragraph 0142, Page 16, paragraphs 0150, 0156, and 0157).

Addressing claim 20, Chan discloses an apparatus for testing a sample for constituents comprising

a plurality of electrochemical sensors, each sensor adapted to detect a different constituent (page 8, [0065]; page 2, [0018]), including concentration (page 15, [0138]) within the sample, a reservoir for containing the sample, a plurality of interconnected channels fluidly coupling the reservoir to the sensors (Figure 9A; page 8, [0070]; page 8, [0073]);

an analytical circuit coupled to the plurality of sensors to analyze the electrochemical properties of the sensors to detect the presence of a particularly constituent at each sensor (page 11, [0096]);

a multiplexer and control circuitry for controlling the multiplexer to selectively electrically couple the analytical circuitry to each of the sensors, whereby the analytical circuitry can be used to analyze each sensor distinctly (page 7, [0060]; page 11, [0096]), wherein the circuit is embodied on a single microchip or a chip and integrated into the apparatus (page 11, [0095]-[0101]) further disclose that there may be a multiplicity of multiplexers, submultiplexers and circuits on the chip ([0096] and [0097]) and that the circuits may allow signal processing [0095], such as with a preamplifier or a filter [0100] and [0101]).

Addressing claim 31, Chan discloses a method for testing a sample for constituents comprising providing a plurality of electrochemical sensors (Page 2, paragraph 0018, Page 17, paragraph 0163) that are each adapted to detect a different constituent within the sample (Page 8, paragraph 0065, Page 2, paragraph 0018), a pump fluidly coupled to the reservoir for applying positive pressure to the reservoir and the plurality of interconnected channels (Page 11, [0102]); providing a circuit coupled to the sensors to analyze the electrochemical properties of the sensors in order to detect the presence of a particular constituent (Page 11, paragraph 0096), introducing a sample into each sensor, and simultaneously analyzing the electrical properties of each

sensor to detect the presence of at least one constituent at each sensor (Page 11, paragraph 0095, Page 17, paragraph 0164).

The circuit is embodied on a single microchip or a chip and integrated into the apparatus (page 11, [0095]-[0101] further disclose that there may be a multiplicity of circuits on the chip [0096] and that the circuits may allow signal processing [0095], such as with a preamplifier or a filter [0100] and [0101]).

Chan does not explicitly state that the disclosed pumps are micropumps. However, it would have been obvious to one with ordinary skill in the art at the time of the invention to have the pumps be micropumps (if not already implied by [0102]) because paragraph [0102] because states, "As such, the invention provides *microfluidic cassettes or devices* ... The devices of the invention can include one or more wells for sample manipulation, waste or reagents; *microchannels* to and between these wells, including *microchannels* containing ... on-line pumps ... [emphasis added]" Also, in other places Chan discloses that the devices of the invention can be fabricated by "a variety of micromachining and microfabrication techniques" or that they are microfluidic devices. See [0103] and [0071].

Addressing claims 32 and 33, Chan discloses each sensor comprising a working electrode with a coating selected to bind with a particular electro-active constituent within a sample (Page 8, paragraph 0065), counter and reference electrodes, (Page 15,

paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164) and wherein the working electrode of each sensor has a different coating that enables the detection of a different constituent at each sensor (Page 2, paragraph 0018), as well as providing a reservoir for containing the sample, and providing a plurality of interconnected channels fluidly coupling the reservoir the sensors, and whereby each sample in each sensor is part of the same larger sample (Page 8, paragraph 0070).

Addressing Claim 37, Chan discloses introducing a different sample to each sensor (Page 4, paragraph 0033).

Addressing Claims 38 and 39, Chan discloses simultaneously determining the concentrations (Page 15, paragraph 0138) of the constituents in the sample at each sensor, as well as analyzing each sensor sequentially (Page 11, paragraph 0095).

Addressing Claims 40 and 41, Chan discloses each sensor comprising a working electrode with a coating selected to bind with a particular electro-active constituent (Page 8, paragraph 0065), counter and reference electrodes (Page 15, paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164), and wherein detecting a constituent in the sample comprises selectively electrically coupling the circuit to the working, reference, and counter electrodes of a sensor, applying a series of electrical pulses to the cell, and measuring the electrical response by the cell responsive to each of the pulses (Page 11, paragraph 0098, Page 15, paragraph 0142, Page 16, paragraphs 0150, 0156, and 0157).

8. Claims 4 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. US 2002/0090649 A1 ("Chan") as applied to claims 1, 5, 10, 12-14, 20, 31-33, and 37-41 above, and further in view of Simpson et al. US 5,993,634 ("Simpson").

Addressing claim 4, Chan discloses using temperature to determine the identity of a particular base in a target nucleic acid (Page 12, paragraph 0109). Chan does not disclose using a micro-heater coupled to each sensor. Simpson discloses a reactor array with micro-passages with a micro-heater disposed on each reactor in order to control the reactions taking place within each reactor (Column 5, lines 31-52). It would

have been obvious to one having ordinary skill in the art at the time the invention was made to modify the testing apparatus as disclosed by Chan by using micro-heaters because the apparatus is micro-scale and a heating element would assist in the detection of target analytes in the sample.

Addressing claim 26, Chan discloses using temperature to determine the identity of a particular base in a target nucleic acid (Page 12, paragraph 0109). Chan does not disclose using a micro-heater coupled to each sensor. Simpson discloses a reactor array with micro-passages with a micro-heater disposed on each reactor in order to control the reactions taking place within each reactor (Column 5, lines 31-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the testing apparatus as disclosed by Chan by using micro-heaters as taught by Simpson because the apparatus is micro-scale and a heating element would assist in the detection of target analytes in the sample.

9. Claims 7, 15, 22-25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. US 2002/0090649 A1 ("Chan") as applied to claims 1, 5, 10, 12-14, 20, 31-33, and 37-41 above, and further in view of Olson US 4,216,069 ("Olson").

Addressing claims 7 and 27, Chan discloses the electrochemical sensors each comprising an electrochemical cell (Page 17, paragraph 0157, Page 17, paragraph 0163) including a working electrode with a coating selected to bind with a particular electro-active constituent (Page 8, paragraph 0065), counter and reference electrodes (Page 15, paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164), as well as adding filters to the device (Page 11, paragraph 0095) and using electrolyte solutions in contact with the electrodes (Page 15, paragraph 0139, Page 2, paragraph 0015).

Chan does not disclose a filter paper that separates the electrodes from each other, or the filter paper containing an electrolyte Chan. Olson discloses an electrochemical cell (Column 1, lines 15-19) with an electrolyte supplied to a filter disc, and the filter disc, or porous medium, positioned between the counter and sensing electrodes (Column 2, line 61 through Column 3, line 4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrochemical cell as disclosed by Chan by positioning filter paper containing an electrolyte between the electrodes as disclosed by

Olson because an electrolyte solution would assist in conduction to produce an electrical signal, and the filter paper would absorb an electrolyte solution.

For claim 27 note that Chan further discloses each working electrode having a coating so that each sensor tests for the same constituent (Page 13, paragraph 0125).

Addressing claim 15, Chan et al. disclose the working electrode is adapted to bind with many different types of proteins (Page 4, paragraphs 0036 and 0038),

Addressing claim 22, Chan discloses electrochemical sensors each comprising an electrochemical cell (Page 17, paragraph 0157, Page 17, paragraph 0163) including a working electrode with a coating selected to bind with a particular electro-active constituent (Page 8, paragraph 0065), counter and reference electrodes (Page 15, paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164), as well as adding filters to the device (Page 11, paragraph 0095) and using electrolyte in contact with the electrodes (Page 15, paragraph 0139, Page 2, paragraph 0015). Chan does not disclose a filter paper that separates the electrodes from each other, or the filter paper containing an electrolyte Chan. Chan does not disclose a filter paper that

separates the electrodes from each other, or the filter paper containing an electrolyte Chan. Olson discloses an electrochemical cell (Column 1, lines 15-19) with an electrolyte supplied to a filter disc, and the filter disc, or porous medium, positioned between the counter and sensing electrodes (Column 2, line 61 through Column 3, line 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrochemical cell as disclosed by Chan by positioning filter paper containing an electrolyte between the electrodes as disclosed by Olson because an electrolyte solution would assist in conduction to produce an electrical signal, and the filter paper would absorb an electrolyte solution.

Addressing Claims 23 and 24, Chan et al. disclose the analytical circuitry being electrically coupled to the working, reference, and counter electrodes (Page 15, paragraph 0140, Page 16, paragraph 0159 through Page 17, paragraph 0164) of each sensor and is adapted to apply a series of electrical pulses to the cell and measure the transient responses through the cell to each of the pulses, and then integrate each transient response to a pulse and derive electrical charge Q as a function of the magnitude of the corresponding pulse (Page 11, paragraph 0098, Page 15, paragraph 0142, Page 16, paragraphs 0150, 0156, and 0157).

Addressing claim 25, Chan disclose detecting the concentration of the constituent in the sample (Page 15, paragraph 0138).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan and Olson as applied to claims 7, 15, 22-25, and 27 above, and further in view of Snow et al. US 6,221,673 B1 ("Snow").

Chan discloses a coating disposed on the electrodes for binding with target molecules (Page 17, paragraph 0164). Chan does not disclose the coating comprising dithiol. Snow discloses a chemical sensor that uses dithiol as a coupling agent on a thin film that comprises electrodes (Column 6, line 55 through Column 7, line 29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrodes disclosed by Chan by providing a dithiol coating on the electrodes as disclosed by Snow because it enables the build-up of thiols to form a resistant, multilayered film, in which variations in the deposition may be controlled (Column 7, lines 4-19).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan and Olson as applied to claims 7, 15, 22-25, and 27 above, and further in view of Peat et al. US 6,478,950 ("Peat") and Warren et al. US 6,187,164 ('Warren").

Addressing claim 8, Chan does not disclose the electrochemical cell comprising a glass frit between the channels external of the sensor and the electrodes, and a capillary housing the other elements of the sensor.

Peat discloses an electrical sensor module comprising at least one electrochemical sensor, with a micro-porous barrier to separate each of the electrochemical sensors from the environment of the sensor module (Column 1, lines 21-27), where the micro-porous barrier could be a glass frit, which would dislodge any fouling material (Column 1, lines 36-43).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrochemical cell as disclosed by Chan and Olson by having a glass frit separate the external environment from the electrodes as disclosed by Peat because it would dislodge fouling material.

Warren disclose an electrochemical cell (80) with a cylindrical glass housing (82) (Figure 4A, Page 4, paragraph 0035).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrochemical cell as disclosed by Chan and Olson by having a cylindrical housing as disclosed by Warren contain the elements in the sensor and protect them from interacting with the surrounding environments.

Addressing claim 9, Chan discloses the one of two electrodes disposed furthest from the channel through which sample enters the sensor, and a second electrode disposed closest to the channel through which sample enters the sensor, and the reference electrode disposed between them (Figures 1 and 2, Page 17, paragraph

0163). Chan does not disclose a capillary housing with an opening adjacent the working electrode for excess sample to exit the cell. Warren further discloses a liquid filling hole (94) that allows for testing and drainage of testing solutions from the electrochemical cell (Figure 4A, Page 4, paragraph 0035).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrochemical cell as disclosed by Chan and Olson by having a hole adjacent the working electrode as disclosed by Warren because it allows for drainage of a testing solution from the electrochemical cell.

12. Claims 17 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan, Olson, and Snow as applied to claim 16 above, and further in view of Bruckenstein et al. US 4,166,775 ("Bruckenstein"), Porter et al. US 6,551,495 B1 ("Porter"), and Srinivasan et al. US 2004/0124858 A1 ("Srinivasan").

Chan discloses the electrodes having one of many possible shapes and sizes (Page 7, paragraph 0054 and 0057).

Chan does not disclose a working electrode comprising a 25 to 100 micron diameter, 1 meter long gold wired coiled around a 0.25 to 0.5 millimeter diameter gold support wire.

Bruckenstein discloses using a gold coiled wire for an auxiliary electrode in order to have sufficient area to keep the cell resistance low enough to provide the necessary current requirements (Column 7, lines 64-68),

Porter discloses using a gold wire as the working electrode in an electrochemical cell (Column 13, lines 53-57).

Srinivasan discloses adjusting the size and shape of electrodes in order to create any cell constant and that varying the current allows for use of the sensor in various applications (Page 3, paragraph 0029).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrodes as disclosed by Chan by altering the size and shape of the electrodes and using a gold wire coil as disclosed by Bruckenstein, Porter, and Srinivasan because the exact size and shape of the electrodes used may vary slightly depending on the geometry of the electrochemical cell and the exact application in which it is being used, as long as they are microscale. It would also be obvious to provide a support wire for a 1 meter long coil.

13. Claims 18-19 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan, Olson, and Snow as applied to claim 16 above, and further in view of Senda et al. US 4,820,399 A ("Senda").

Chan discloses the preferred electrodes being gold electrodes (Page 7, paragraph 0056). Chan does not disclose that the working electrode may be a powdered gold bound together by adhesive being a carbon powder and tetraflourethylene adhesive. Senda discloses an enzyme electrode made by combining a noble metal, such as gold, (Column 4, lines 16-31) with graphite powder and a non-polar binder, such as Teflon (tetraflourethylene) paste (Column 4, lines 45-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrodes as disclosed by Chan by using a powdered gold and graphite bounded by polytetraflourethylene as disclosed by Senda because of the ease of forming the electrode.

Final Rejection

14. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX NOGUEROLA whose telephone number is (571) 272-1343. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAM NGUYEN can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alex Noguerola
Primary Examiner
AU 1753

September 26, 2007